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64046 7590 02/29/2008 MINTZ, LEVIN, COHN, FERRIS, GLOVSKY AND POPEO, P.C ATTN: PATENT INTAKE CUSTOMER NO. 64046			EXAMINER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

		Application No.	Applicant(s)
		10/597,119	MOHEBBI, BEHZAD
Office Action Summary		Examiner	Art Unit
		TAN TRINH	2618
Period fo	The MAILING DATE of this communication app or Reply	pears on the cover sheet	with the correspondence address
A SH WHIC - Exte after - If NC - Failu Any	ORTENED STATUTORY PERIOD FOR REPL' CHEVER IS LONGER, FROM THE MAILING Donsions of time may be available under the provisions of 37 CFR 1.1 SIX (6) MONTHS from the mailing date of this communication. Depend for reply is specified above, the maximum statutory period varie to reply within the set or extended period for reply will, by statute reply received by the Office later than three months after the mailing ed patent term adjustment. See 37 CFR 1.704(b).	ATE OF THIS COMMUN 36(a). In no event, however, may will apply and will expire SIX (6) Mi , cause the application to become	NICATION. a reply be timely filed  ONTHS from the mailing date of this communication. ABANDONED (35 U.S.C. § 133).
Status	,		
2a) <u></u> □	Responsive to communication(s) filed on 11 Ja This action is <b>FINAL</b> . 2b) This Since this application is in condition for allowar closed in accordance with the practice under E	action is non-final.	
Dispositi	ion of Claims		
5)□ 6)⊠ 7)□	Claim(s) 1-44 is/are pending in the application.  4a) Of the above claim(s) is/are withdraw Claim(s) is/are allowed.  Claim(s) 1-44 is/are rejected.  Claim(s) is/are objected to.  Claim(s) are subject to restriction and/or	vn from consideration.	
Applicati	ion Papers		
10)⊠	The specification is objected to by the Examine The drawing(s) filed on 12 July 2006 is/are: a) Applicant may not request that any objection to the Replacement drawing sheet(s) including the correct The oath or declaration is objected to by the Ex	☑ accepted or b) ☐ object  ☐ drawing(s) be held in abeyone  ☐ ion is required if the drawin	ance. See 37 CFR 1.85(a). g(s) is objected to. See 37 CFR 1.121(d).
Priority u	ınder 35 U.S.C. § 119		
a)[	Acknowledgment is made of a claim for foreign  All b) Some * c) None of:  1. Certified copies of the priority documents 2. Certified copies of the priority documents 3. Copies of the certified copies of the prior application from the International Bureau see the attached detailed Office action for a list of	s have been received. s have been received in ity documents have bee t (PCT Rule 17.2(a)).	Application No n received in this National Stage
Attachment	t(s) e of References Cited (PTO-892)	4) ☐ Interview	Summary (PTO-413)
2)  Notice 3) Inform	e of Draftsperson's Patent Drawing Review (PTO-948) nation Disclosure Statement(s) (PTO/SB/08) r No(s)/Mail Date	Paper No	o(s)/Mail Date Informal Patent Application

#### **DETAILED ACTION**

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### **Double Patenting**

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

2. Claims 1-44 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-128 of copending Application No. 11/369,231.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations of the claims 1-44 of the instant application are encompassed by the limitations of the claims 1-128 of the above copending Application.

This is a <u>provisional</u> obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

### Specification

### Claim Rejections - 35 USC § 112

3. Claims 17-18 and 26-27 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding claim 17, the dedicated wire-line data and/or control links in the communication pathway between the network unit and the user unit selected from among links in a group consisting of electric wires, telephone lines, and coaxial cables, this subject matter which was not described in the specification.

Regarding claim 18, dedicated wire-line data and/or control links in the communication pathway between the network unit and the user unit based on a wireline standard, this subject matter which was not described in the specification.

Regarding claim 26, an identification and reference frequency unit that generates a Binary Phase Shift Keying (BPSK) signal modulated by the identification number, modulates the signal at a suitable part of the operating unlicensed spectrum band, and couples the signal into a transmitter pathway of a forward-link of the network unit. This subject matter which was not described in the specification.

Regarding claim 27, an identification and location unit that modulates identification and location information on a reverse link communication waveform by coded low bit-rate modulation, the modulation being amplitude modulation or Differential Quadrature Phase Shift Keying (DQPSK) modulation. This subject matter which was not described in the specification.

## Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.
- 5. Claims 1-12, 15-16, 19, 21-24, 34-37 and 42-43 are rejected under 35 U.S.C. 102(e) as being anticipated by Bassiri (U.S. Pub. No. 2006/0046642).

Regarding claim 1, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]); a user unit (14) that maintains a user link with the user transceiver (14) (see fig. 1 and 3, page 3, section [0030]); a two-way communication pathway (antennas 12 and 16) between the network unit (10) and the user unit (14) adapted to facilitate signal communication between the network transceiver (10) and the user transceiver (14) in autonomous repeater hops between the network transceiver and the network unit (see fig. 1), between the user transceiver (14) and the user unit (40) (see fig. fig. 1-

2, page 3, sections [0028-0029]), and between the network unit (10) and the user unit (14) (see fig. 1) (see page 3, section [0027]); and beam-formers respectively coupled to the network unit (10) and the user unit (14) and adapted to communicate signals (4) in an operating frequency band of the network and user transceivers and to control effective radiated power (see fig. 1, page 3, section [0027-035]). In this case, the beam-formers respectively coupled on antenna 12 and antenna 16 with the wireless communication link 4, the primary repeater 10 and auxiliary repeater 14 also include an automatic power control circuit 56, that receives the output signal of power amplifier 40 and 42 and processes the signal and positional information to generates respective feedback control signal for control the gain of the downlink and uplink power amplifier 40 and 42 so as maintain an output signal strength thereof within predetermined limits. So that is the control effective radiated power of the repeater.

Regarding claim 2, Bassiri teaches the beam-formers are adapted to control effective radiated power to increase coverage area of the user unit (see fig. 1, page 4, sections [0033-0035]). In this case, the power control 56, control the power amplifier 40 and 42 to control the effective radiated power to increase coverage area of the user unit.

Regarding claim 3, Bassiri teaches the beam-formers are adapted to control effective radiated power to improve link quality of the network unit (see fig. 1, page 4, sections [0033-0035 and 0038]). In this case, the power control 56, control the power amplifier 40 and 42 to control the effective radiated power to increase coverage area of the network unit.

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Regarding claim 4, Bassiri teaches transmit antennas (12 16 and 18) coupled to the beamformers whereby the transmit antennas (12) operate at the network (10 or 28) and user transceiver (14) operating frequency and the beam-formers control effective radiated power of the network unit (10) and user unit to increase coverage area of the user unit (14), (see fig. 1, page 3, section [0027-035]). In this case, the beam-formers respectively coupled on antenna 12 and antenna 16 with the wireless communication link 4, the primary repeater 10 and auxiliary repeater 14 also include an automatic power control circuit 56, that receives the output signal of power amplifier 40 and 42 and processes the signal and positional information to generates respective feedback control signal for control the gain of the downlink and uplink power amplifier 40 and 42 so as maintain an output signal strength thereof within predetermined limits. So that is the control effective radiated power of the repeater.

Regarding claims 5-6, Bassiri teaches receiver antennas (12, 16 or 18) respectively coupled to the beam-formers whereby the receiver antennas operate at the network and user transceiver operating frequency and the beam-formers control antenna radiation patterns of the network unit and user unit to increase coverage area of the user unit (see fig. 1, page 3, section [0027-035]). In this case, the antennas12, 16 or 18 can be the receiver antennas, and the beam-formers respectively coupled on antenna 12 and antenna 16 with the wireless communication link 4, the primary repeater 10 and auxiliary repeater 14 also include an automatic power control circuit 56, that receives the output signal of power amplifier 40 and 42 and processes the signal and positional information to generates respective feedback control signal for control the gain of the downlink and uplink power amplifier 40 and 42 so as maintain an output signal strength

thereof within predetermined limits. So that is the control effective radiated power of the repeater.

Regarding claims 7 and 8, Bassiri teaches a gain controller that compensates for propagation losses between the network unit and user unit alone (see fig. 1, page 2, section [0013-0014]). In this case, the compensates for propagation can be control on the enclosed environment such as in the mine for compensates for propagation losses between the network unit and user unit alone.

Regarding claim 9, Bassiri teaches the network unit (10) configured to be placed exterior to a structure (see fig. 1); the user unit configured to be placed interior to the structure (see fig. 1); and a gain controller that compensates for indoor-outdoor propagation losses alone (see page 1, sections [0026-0032]).

Regarding claim 10, Bassiri teaches the autonomous repeater hop between the network unit (10) and the user unit (14) on the communication pathway (4) communicates on a carrier signal that is independent of signals communicated between the repeater (2) and the network and user transceivers (see fig. 1, page 3, section [0027-0030]).

Regarding claim 11, Bassiri teaches the autonomous repeater hop between the network unit (10) and the user unit (14) on the communication pathway (4) communicates at a carrier

frequency that is independent of signals communicated between the repeater and the network and user transceivers (see fig. 1, page 3, section [0027-0028]).

Regarding claim 12, Bassiri teaches the autonomous repeater hop between the network unit (10) and the user unit (14) on the communication pathway (4) communicates with a signal waveform that is independent of signal waveform communicated between the repeater (2) and the network and user transceivers (see fig. 1, page 3, section [0027-0028]).

Regarding claim 15, Bassiri teaches dedicated wireless data and/or control links in the communication pathway (4) between the network unit (10) and the user unit (14) based on a wireless standard (see fig. 1. page 3, section [0027-0028]).

Regarding claim 16, Bassiri teaches dedicated wireless data and/or control links in the communication pathway (4) between the network unit (10) and the user unit (14) that are power-controlled for operation at reduced transmit power (see fig. 1, page 3, section [0027-035]). In this case, the antennas12, 16 or 18 can be the receiver antennas, and the beam-formers respectively coupled on antenna 12 and antenna 16 with the wireless communication link 4, the primary repeater 10 and auxiliary repeater 14 also include an automatic power control circuit 56, that receives the output signal of power amplifier 40 and 42 and processes the signal and positional information to generates respective feedback control signal for control the gain of the downlink and uplink power amplifier 40 and 42 so as maintain an output signal strength thereof within predetermined limits. So that is the control effective radiated power of the repeater.

Regarding claim 19, Bassiri teaches an in-band or out-of-band control link in the communication pathway between the network unit and the user unit (see fig. page 4, section [0032]). Inn this case, the wireless communication system with MS 40 and PDA with communication with the normal network in the standard frequency is in-band control link in the communication.

Regarding claim 21, Bassiri teaches a dedicated wireless proprietary control link in the communication pathway between the network unit (10) and the user unit (14) based on frequency tones (see fig. 1, page 1, section [0001]).

Regarding claim 22, Bassiri teaches the network unit (10) and/or the user unit (14) further comprises: a pair of antennas (12s and 16 and 18); and a switch connected to the antenna pair that performs switching operations for transmit/receive operations enabling switched antenna diversity in all or some repeater hops and communication links (see fig. 1, page 3, section [0027-0028). In the case the antenna 12, 16 and 18 is the transmitted and received antennas.

Regarding claim 23, Bassiri teaches local oscillators in the network unit and the user unit; and a control and/or data link in the communication pathway from the network unit to the user unit that carries a synchronization signal to mutually synchronize the local oscillators (see fig. 2-3, VCO 58, page 4, sections [0036-0037]).

Regarding claim 24, Bassiri teaches local oscillators in the network unit and the user unit that are synchronized using mains electricity signal oscillations to mutually synchronize the local oscillators (see fig. 2-3, VCO 58, page 4, sections [0036-0037]).

Regarding claim 34, Bassiri teaches at least one amplifier (22 or 30 of amplifier 40 and 42) that boosts a desired signal entering the repeater in part or all of an allocated signal spectrum (see fig. 1-3, page 3, sections [0029-0030]).

Regarding claim 35, Bassiri teaches the communication pathway (4) between the network unit (10) and the user unit (14) has an operating band that is determined using a technique selected from one or more of a group consisting of preselecting the operating band, manually selecting the operating band, and automatically selecting the operating band based on detected signals (see page 3, sections [0027-0030]). In this case, the wireless communication system can be preselecting the operating band and automatically selecting the operating band see GSM 900 DCS 1800 and UMTS system.

Regarding claim 36, Bassiri teaches at least one amplifier (22 or 30 of amplifier 40 and 42) that boosts a desired signal entering the repeater whereby the signal is from wireless systems selected from one or more of a group consisting of Global System for Mobile Communications (GSM) and all it's derivative systems, cdma2000 (Code Division Multiple Access), Wideband Code Division Multiple Access (WCDMA), and any other standards, and systems operating in cellular or wireless bands, as well as Global Positioning System (GPS). (see page 3, sections

[0027-0030]). In this case, the wireless communication system can be a GSM 900 DCS 1800 and UMTS system.

Regarding claim 37, Bassiri teaches directional antennas (12) capable of mutual isolation of the network unit and the user unit operating in the boosted signal frequency band (see fig. 1-2, antenna 12 is directional antenna on page 3, section [0028]).

Regarding claim 42, Bassiri teaches the network unit (10) is configured to operate with a plurality of user units (14s) (see fig. 5-7, plurality of user units (14)).

Regarding claim 43, Bassiri inherently teaches the network unit (10) and user unit (14) are attached and configured mechanically back-to-back in a single housing (see fig. 1 and 4, section [0027]).

### Claim Rejections - 35 USC § 103

- 6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:
  - (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 6, 13, 14, 20, 25 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bassiri (U.S. Pub. No. 2006/0046642) as applied to claim 1 above, and further in view of Khayrallah (U.S. Pub. No. 2002/0115409).

Regarding claims 6, 13-14 and 20, Bassiri teaches the autonomous repeater hop between the network unit (10) and the user unit (14) is tuned to operate at a wireless frequency band (see page 3, section [0027]). But Bassiri does not mention the selected from a group consisting of an Unlicensed National Information Infrastructure (U-NII) spectrum frequency band, an Unlicensed Personal Communication Services (U-PCS) spectrum frequency band, an Industrial, Scientific and Medical (ISM) spectrum frequency band, and any unlicensed frequency band.

However, Khayrallah teaches the repeater hop between the selected from a group consisting of an Unlicensed National Information Infrastructure (U-NII) spectrum frequency band, an Unlicensed Personal Communication Services (U-PCS) spectrum frequency band, an Industrial, Scientific and Medical (ISM) spectrum frequency band, and any unlicensed frequency band (see fig. 1, and 4, page 1, sections [0012-0014]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time invention was made to modify above teaching of Bassiri with Khayrallah, in order to provide hop network with Bluetooth standard enables to seamless communication of data and voice over short range wireless link between both mobile device and fixed device (see suggested by Khayrallah on page 1, section [0013]).

Regarding claim 25, Bassiri teaches the network unit (10) and the user unit (14) are assigned unique identification numbers (fig. 4, page 4-5, sections [0039-0040]). In this case, the

data exchange between the control station 28 and the signaling and driving system 36, the initiate data exchange that is obvious the assigned unique identification numbers.

Regarding claim 44, Khayrallah teaches the repeater operates in an unlicensed frequency band and is capable of selecting an operating band at a frequency that does not interfere with other devices operating in the unlicensed frequency band (see fig. 1, and 4, page 1, sections [0012-0014]).

### Allowable Subject Matter

8. Claims 28-33 and 38-41 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### Reasons for allowance

9. The following is an examiner's statement of reasons for allowance:

Regarding dependent claims 28 and 32-33, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]), However, Bassiri alone or in combination with other prior art of record, fail to disclose, The repeater according to claim 1 further comprising: a calibration signal generator/transmitter that generates a spread-spectrum signal for complex channel impulse response generation, or that generates a

complex channel impulse response using correlation, or generates a complex channel impulse response using matrix inversion as specified in dependent claim 28 or 32 or 33.

Regarding dependent claim 29, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]), However, Bassiri alone or in combination with other prior art of record, fail to disclose, the repeater according to claim 1 further comprising: a calibration signal generator/transmitter that generates a spread-spectrum signal for complex channel impulse response generation using a code generation technique selected from one or more techniques from among a group consisting of: generating spread-spectrum waveforms by Pseudo Random, Gold, or other code known a priori to all units; generating code phase of a known code to uniquely-identify all user units and all network units; allocating codes or code phases by dynamic assignment strategies; using more than one code for complex channel impulse response generation; using more than one code phase for complex channel impulse response generation; modulating the spread-spectrum signal by unit identifier; and generating the spread-spectrum wave frequency in the operating cellular band or in an unlicensed band, as specified in dependent claim 28.

Regarding dependent claim 38, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]), However,

Bassiri alone or in combination with other prior art of record, fail to disclose, an echo canceller in each of the network and the user units, which mutually isolates the network unit and the user unit and operates in a frequency band of a boosted signal, as specified in dependent claim 38.

Regarding dependent claim 39, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]), However, Bassiri alone or in combination with other prior art of record, fail to disclose, further comprising: an echo canceller in each of the network and the user units, which inserts a delay in boosted signals path, as specified in dependent claim 39.

Regarding dependent claim 40, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]), However, Bassiri alone or in combination with other prior art of record, fail to disclose, further comprising: an echo canceller in each of the network and the user units, that insert a delay in signal path, the delay being selected from a group consisting of a deliberate delay in the network unit, a deliberate delay in the user unit, and a deliberate delay in both the network unit and the user unit, as specified in dependent claim 40.

Regarding dependent claim 41, Bassiri teaches a repeater (2) that mediates traffic between a network transceiver and a user transceiver in a wireless communication system (see fig. 1-3) comprising: a network unit (10) that maintains a network link with the network transceiver (10 and 20) (see fig. 1-2, page 2, section [0013], page 3, section [0029]), However, Bassiri alone or in combination with other prior art of record, fail to disclose, The repeater according to claim 1 wherein: a reverse-link pathway in the communication pathway between the network unit and the user unit, and the reverse-link between the network unit and the network transceiver are gated based on signal presence to reduce interference and power consumption, as specified in dependent claim 41.

#### Conclusion

10. Any response to this action should be mailed to:

Commissioner of Patents and Trademarks Washington, D.C. 20231

or faxed to:

(571) 273-8300, (for Technology Center 2600 only)

Hand-delivered responses should be brought to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314).

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tan Trinh whose telephone number is (571) 272-7888. The examiner can normally be reached on Monday-Friday from 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiners supervisor, Anderson, Matthew D., can be reached at (571) 272-4177.

The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Tan H. Trinh Division 2618 February 23, 2008

/TAN TRINH/ Examiner, Art Unit 2618 PATENT EXAMINER TRINH, TAN